Title Page: Attracting Birds Where You Live

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Grade Level/ Subjects: Fourth Grade Science
Curriculum Standards: This unit demonstrates the following Illinois Learning Standards:

11.A.2b: Collect data for investigations using scientific process skills including observing, estimating and measuring.
11A.2e. Report and display the results of individual and group investigations.
11.B.2b: Develop a plan, design and procedure to address the problem identifying constraints (e.g., time, materials, technology).
11.B.2c: Build a prototype using available tools and materials.
12.B.2b: Identify physical features of plants and animals that help them live in different environments (e.g., specialized teeth for eating certain foods, thorns for protection, insulation for cold temperature).
13.A.2b: Explain why similar investigations may not produce similar results.
13.A.2c: Explain why keeping accurate and detailed records is important.
13.B.2e: Identify and explain ways technology changes ecosystems (e.g., dams, highways, buildings, communication networks, and power plants).

Overview: This activity will allow students to become familiar with birds that live in the area. Students will observe and use their research to attract birds that live in their neighborhood by making bird feeders and monitoring them daily.

Purpose: The purpose of this activity is to get students involved and closer to nature. This will activity will also make students more aware of the importance of their environment. Students will develop an understanding of what it is like to be a bird surviving in a certain habitat.

Learning Objectives:
Students will be able to:

- Act like scientists and collect and analyze data by observation.
- Explain the importance of birds and their habitat.
- Observe a bird and identify them later from their notes.
- Build a bird feeder.
- Research about different nests and learn about the birds that live there.
- Make a bird blind and use it to observe birds at home.
- Use nest material to help identify a bird's nest.
- Act like a bird and use a similar technique to build a nest.
- List features of birds that scientists use to distinguish the similarities and differences.
- Make a poster presentation.
- Find a strategy to help save and protect birds.

Materials:
Science Journal

Crinkleroots Guide to Knowing the Birds by: Jim Arnosky
Old bird's nest
Heavy tape (plastic or cloth)
Hole puncher
Empty clean milk carton
Paper plates
Bird seeds
Poster board
Markers
Crayons
Big cardboard box (Size should be able to fit in a window.)
String or yarn
Magnifying glass
Peanut butter
Teaspoon
Tweezers
Chow mien noodles
Sharp knife (for teacher's use only)
Cut-out pictures of birds
Particles and Prairie laser disc (This could be borrowed through Fermilab's Ledermen Science Center They also lend out the laser disc player.) or a bird CD could be used. (Be careful and make sure it has bird calls and songs on the CD).
Bird field guides: A Guide to Field Identification: Birds of North America by Robbins, Brunn, Zim or National Audubon Society: The Sibley Guide to Birds by David Sibley, or Peterson First Guides: Birds by Roger Tory
Web sites that are helpful for the poster presentation:
http://www.birdsource.org
http://kidsgowild.com
http://kidsgowild.com
http://www.nwf.org./kids/
http://www.edutel.org/roadkill/alt_index.html
http://epa.gov/kids/
http://chesapeakebay.net/baybio.htm
Helpful ideas and plans come from Cindy Reel and Beckie Wetzel
"Use Your Wings and Fly into Our Schoolyard"

Teachers, before starting the lesson, write a letter home to the parents explaining what the children will be doing and learning in the next couple of weeks. Include the materials the students will need throughout this unit so the parents will have advance notice.

Day 1: Learning What a Bird Is
(10-15 minutes) Read *What is a Bird* by Robert Snedden.

(20 minutes) Provide pictures of different types of birds. Have students get into groups of 4-5 to first sort the birds by features and then describe the differences or similarities among the different birds. Students can use field guides, encyclopedias, the computer,

old pictures from bird magazines, and any other resources. Go over the body parts of a bird. Body parts students should focus on are: bill, eye, foot, breast, tail, crown, wing, neck, and leg. Tell students the importance of these body parts and how they are used to distinguish among different birds.

(20 minutes) Have each group of students discuss and share what they found in their groups. As a class list what they noticed; the differences, the similarities, the colors, the size, where they live, and the body parts.

TEACHERS: Send a letter home telling parents that their child will need a cardboard box to make a bird blind. Include the size of the box and the purpose of the box. Remind students to put their name on it.

HOMEWORK: Tell students to bring letter home explaining about the cardboard box that is needed for class.

Day 2: Listening for Birds
(20 minutes) Listen to bird calls from the laser disc borrowed from Fermilab or a bird CD. Explain to the students that there is a difference between the calls and a song. Tell students that there are many different songs and calls that birds use to communicate with one another. It is also important for students to know that only the male birds sing a song and both the male and female make calls.

(10 minutes) Take the students outside to listen to the birds around the school. REMIND STUDENTS THAT IN ORDER TO HEAR THE BIRDS THEY NEED TO BE SILENT AND LISTEN CAREFULY. Tell students to count how many birds they hear, distinguish whether they heard a song or a call. If they heard more than one, were they different or the same? Students should be taking notes in their science notebooks.

(10 minutes) Stay outside and have a discussion about what they heard.

HOMEWORK: Have students write a page on the topic If I were a bird . . .î in their science journal. They can write about what bird they would be, what they would do, how their song and calls would sound, or anything about being a bird. Remind students about their box.

Day 3: Observing Birds
(10 minutes-20 minutes) Read *Crinkleroot's Guide to Knowing the Birds* by Jim Arnosky.

(5 minutes) Have students do a quick write in their journals on what they learned from Mr. Crinkleroot.

(10 minutes) Discuss what the students wrote down.
(10 minutes) In groups have students discuss What kind of bird they would be and why or what would they do? (This is from their homework from day 2.)

(20 minutes) Go outside for a walk to see what birds students observe. REMIND STUDENTS THAT WHEN THEY OBSERVE BIRDS THEY SHOULD ONLY LOOK AND NOT TOUCH!!! Have students bring their journals with them so they could sketch/draw or write about what they see and write down what they hear.

(10 minutes)
HOMEWORK: Have students look outside around their neighborhood for birds. Record what they find in their journals. (Remember sketches or color descriptions are helpful.)

Day 4: Identifying Birds
(30 minutes) Allow this time for students if they need more time looking up the bird they saw from yesterday's observations. Allow them to use the resource books and the Internet. Have them write this down in their science journals.

(20 minutes) Discuss what the students saw from their observations at school and then what they saw for homework. Also discuss what kind of birds they found.

HOMEWORK: Have students measure a window at home that they will have access to all the time. Also find a box close to the window width and length. Remind students that they need to bring in their box for tomorrow.

Day 5: Making a Bird Blind
(20-25 minutes) Have students make a bird blind. A bird blind acts as a camouflage while they observe the birds. Explain that in order to observe birds you have to be very quiet so you do not frighten them. This box will hide you and you can spy on the birds through observation holes. Students will use a cardboard box that will fit in a window at their house. Teachers will need a sharp knife and some heavy plastic tape. Students will stand in front of their box to determine where the observation holes need to be cut out. Students could help each other, but teachers REMIND STUDENTS THAT ONLY THE TEACHER WILL CUT OUT THE HOLES WITH THEIR KNIFE. One box will be made for the classroom.

(15 minutes) Have students take turns trying out their boxes in the classroom windows. Have students write down any birds they observe in their science journals.

(10 minutes) Discuss what they saw through their bird blind.

HOMEWORK: Have students observe birds they see from their window. Have students write descriptions down in their science journal. They may add a drawing and color it if they wish. Tell them to focus on the birds behaviors, actions, if they could tell if the bird was a male or a female, how did they know, and what sounds did they hear?

Day 6: Exploring a Bird Nest
Provide an old bird's nest and a magnifying glass for the students. Place the nest in the classroom in the science center. Nests should be placed under a tray so the debris will not get all over.

(15 minutes) Take a walk around the school to observe the birds. Listen for any bird calls and observe their behavior. Have students record their observations in their science journals.

(10 minutes) Read *Cradles in the Trees: The Story of a Bird Nests* by Patricia Brennan Demuth.

(20 minutes) Tell students they are going to be scientists and explore a real bird's nest. Hand out the Recording Workshop (below). Students will check off items that they see in the nest. Teachers will REMIND STUDENTS NOT TO TOUCH THE NEST OR PULL IT APART. THAY ARE ONLY TO LOOK AT IT USING THE MAGNIFYING GLASS. Clearly say, "Your job as a scientist is to take the magnifying glass and look very closely and slowly at the nest and check the items you saw that the birds may have used." Also tell students if they find something in the nest that is not on the recording sheet, they should write it down.

While some students are doing the nest recording sheets, other students can be looking on the Internet or other resource books to find other types of nests. Tell students to focus on one bird and its nest. Ask them to look for what the bird uses its nest for, what material does it use to make it, what is unique about this nest, and where it could be found. When they complete one bird, they can begin another. Have students write this in their science journals. Other students could be using the bird blind to look outside. REMIND STUDENTS THAT IT IS VERY IMPORTANT TO WRITE EVERYTING DOWN THAT THEY FIND.

HOMEWORK: Have students record what they see through their bird blind. Have them look for any bird nests and record what they see.

Day 7: Nest Recording
(40 minutes) Continue with the nest exploring and nest research.

Days 8, 9 10: Observing Birds and Researching Bird Nests
(20 minutes) Walk around school to observe the birds. Use science journals.

(10 minutes) Discuss homework and what they found or how they are doing with their nests. Ask if there is anything new.

(20 minutes) Have students do research on their bird nest. Students may also use this time to identify the bird(s) they saw.

Day 11: Observing Birds and Presenting Nest Research

(15 minutes) Walk around school to observe the birds around school. Use science journals.

(10 minutes) Follow up on the homework from yesterday.

(20 minutes) Have students present the nest they researched and any information about what bird uses it.
HOMEWORK: Have students observe birds outside and write down any information they find in their journals.

Day 12: Presenting Nest Research
(10 minutes) Allow this time for students to look at their classmates nests.

(35 minutes) Continue with the nest presentations.

HOMEWORK: Observe birds outside and note information down in their journals.

Day 13: Making a Bird Nest
(5 minutes) After all students have finished with their recording checklist, have a five-minute discussion about what the students saw in the nest.

(10 minutes) Tell students that they are going to see how much work it is to make a nest. Instructions: The students will make the nest using chow mien noodles and peanut butter. Students will use tweezers, as their beaks and grab the chow mien noodles as their material to build the nest. The students will use peanut butter to hold the nest together. The noodles will be stacked on a paper plate, and students should be creative and make their own nest.

(30- 40 minutes) Students work constructively on their nests.

HOMEWORK: Students will observe birds from their window at home. Have students write down descriptions in their science journal. They may add a drawing and color if they wish.

Day 14: Making a Bird Feeder
All students will need a paper towel roll.
Teacher will supply the bird seeds.
Students will first use a hole puncher to make two holes at the end of their roll. The two holes are on the same end and made across from each other. This is so the string can go through and the roll can be hung.
Next have students take a plastic knife and put peanut butter all over the paper towel roll.
Finally have the students roll peanut butter roll into the bird seeds.
Have students take it home and hang it where it can be viewed.

HOMEWORK: Hang up the bird feeder somewhere outside and observe what birds are using it. Have students think of important factors they could observe. Start students with

an example, like how many birds they saw. Tell students to come in with other things they can observe.

Day 15: Updating Bird Feeders
(15-20 minutes) Discuss what students saw from their homework.

(30 minutes) Use this time to catch up with nest presentations or catch up on homework that needs to be discussed.

Day 16: Protecting a Rare Bird
(15 minutes) Read *Saving the Peregrine Falcon* by Caroline Arnold

(20 minutes) Have a class discussion about the importance of protecting birds. Stimulate students thinking by asking why we should worry about animals, our environment and nature. Finally ask what would they do if there was a population of rare birds living in their area and the students are the scientists who discovered them. What would they do? How would they save them. The students will work in groups of four or five. They should come up with a plan and a poster of how to protect these birds. After the class presentations they will vote on the best plan.

Days 17 & 18: Planning Time
Allow students this time to work on their plan and posters.

Days 19 & 20: Presenting the Plan
Have students present their plan and vote for which is the best.

Assessment:

POINTS EARNED	EXCEEDS EXPECTATIONS 3	MEETS EXPECTATIONS 2	DOES NOT MEET EXPECTATIONS 1	SCORE

SCIENCE JOURNALS	Detailed complete journal entries	General entries. Missing three journal entries	Skimpy journal entries. Missing more than three	
LIST SIMILARITIES AND DIFFERENCE BETWEEN BIRDS	Detailed description of similarities and differences	General description of similarities and differences	Skimpy description of similarities and differences	
NEST RESEARCH	Research included accurate information in an organized manner.	Research included mostly accurate information with slight organization.	Research included inaccurate information and is unorganized.	
POSTER PRESENTATION	Detailed and informative presentation with an outstanding strategy	General and slightly informative presentation with a simple strategy	Skimpy presentation with inaccurate information; unreasonable strategy or half done strategy	
			TOTAL SCORE:	

Overall Point Total: _____
Comments:

Recording Sheet

Look at the nest very carefully with your magnifying glass. Look to see what material the bird used to make her nest. Check of any of the items you see listed below. If you see an item that is not written on the list please add it on the bottom.

Name _____

_____ twigs

_____ leaves

_____ straw

_____ grass

_____ weeds

_____ flower

_____ string

_____ plastic

_____ cloth

_____ paper

_____ feathers

_____ mud